

KEY TO THE AMERICAN GENERA OF THE
SUBFAMILY CRYPTOCHEILINÆ (HY-
MENOPTERA: PSAMMOCHARIDÆ)
MALES AND FEMALES

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Banks (1) separated the subfamilies Cryptocheilinæ and Auplopodinæ (Pseudageninæ) on the basis of the attachment of the abdomen to the thorax. In the case of the Auplopodinæ the basal segment of the abdomen narrows in front to form a short petiole and enlarges at its juncture with the propodeum. In the middle, the sides of this basal segment are concave, thus making the basal tergite hourglass-shaped in vertical view. In the Cryptocheilinæ, on the other hand, the basal segment is straight-sided (or slightly convex) and not petiole-like, and may be narrowed gradually or suddenly.

The writer (2) published on the genera of this subfamily for North America, but only for the females. The genera keyed in this paper represents all the genera of this subfamily for North and South America, including Chile. The latter country was not included in Banks' paper¹ of the South American species, as he stated that he would consider that country separately. Much use has necessarily been made of the keys in Banks' papers. However, his keys were mostly for the female sex and only occasionally did they cover the male sex. Adipogon Banks is placed in Dipogon Fox, and the latter is changed from the Auplopodinæ (Pseudageninæ) to this subfamily, since the first abdominal segment comes nearer to being straight-sided than hourglass-shaped. Further, the genitalia approaches more nearly to Priocnemis in its character than that of any other genus. It is hoped that these keys will enable a worker to arrive at the correct genus in either sex.

The genera not yet found in North America are marked with an asterisk.

KEY TO THE GENERA OF CRYPTOCHEILINÆ.
MALES AND FEMALES

1. First recurrent vein meets the second cubital cell close to top of cell; the fore wing has a semitransparent area enclosing an opaque spot, in first discoidal cell; claws with two teeth on inner margin; under surface of terminal tarsal joint with a row of strong spines on each side *Hemipepsis* Dahlbom
1. First recurrent vein meets the second cubital cell near the middle; first discoidal cell without an opaque spot; claws with a single tooth or cleft 2
2. Wings rudimentary *Myremecosalius* Ashmead
2. Wings well developed 3
3. A stout, slightly curved spine in front of each mid coxæ; female with second ventral segment with a raised area or two mammæ on the second ventral segment just behind the transverse groove; genitalia of male characteristic, the ædeagus with wide flaring tips, volsellæ with brushes of long hair, subgenital plate broad and almost flat; both sexes with toothed claws and female with strong teeth and spines on posterior tibiæ; males with short teeth only; large species *Priocnemioidea* Radoszowski
3. No tooth or spine in front of mid coxæ; no mammæ on second ventral of female; male genitalia not like above; claws may be toothed or split 4
4. Males 5
4. Females 25
5. First two pair of claws cleft, last pair toothed; subgenital plate long and slender; antennæ slender toward tip *Priochilus* Banks
5. Claws not as above 6
6. All the claws cleft or split 7
6. Fore pair claws split and the last two pair toothed, or all toothed 10
7. Transverse vein in fore wings straight across; third cubital cell as broad as long, almost rectangular, with a deep median bend in third intercubital vein (concave on inside); parameres longer than the rest of genitalia; ædeagus is slender and split in middle, and volsellæ have a deep curve about the middle on outer side; labial palpi very long *Minagenia* Banks
7. Transverse vein in fore wings oblique, the third cubital cell is longer than broad and the third intercubital vein does not have the median bend; or if somewhat like above, very hairy species with banded wings 8
8. Antennæ distinctly clavate with the joints from about nine through twelve the thickest; last segment of abdomen compressed; dorsal part of pronotum flat, front part vertical; subdiscoidal vein in rear wing ends much basad of cubitus *Balboana* Banks
8. Antennæ not clavate and last segment of abdomen not compressed; if

the pronotum is vertical in front, then not otherwise as in preceding couplet and also very hairy with banded wings 9

9. Front part of pronotum rounded and not with banded wings.

Anacyphonyx Banks

9. Front part of pronotum vertical; very hairy species, banded wings; legs short, front femora stout, parameres thick and generally much longer than rest of genitalia; volsellæ and parapenal lobes narrow, short *Dipogon* Fox

10. Fore claws split; last two pair toothed; clypeus very long 11

10. All the claws toothed 12

11. Clypeus much raised above mouth parts, often with a sharp tooth in center of anterior margin; species not long for their size, similar to the rest of subfamily; markings on body not like those of the genus *Pæcilopompilus* Howard (*Batazonus* Ashmead) in the subfamily Psammocharinæ; volsellæ with a hook at upper end, parameres generally broad, subgenital plate broad, ovate, and almost flat for most part *Priocnessus* Banks

11. Clypeus not raised above mouth parts and never with a sharp tooth on the middle of anterior margin of clypeus; long slender species reminiscent of the Agenoid type, often with markings like those of *Pæcilopompilus* Howard; volsellæ without hooks, very broad.

Amerocnemis Banks

12. No distinct spines on last joint of posterior tarsi 13

12. Distinct spines either lateral or median on posterior tarsi 16

13. Pronotum vertical in front 14

13. Pronotum rounded in front; basal vein generally very much basad of transverse vein in front wing 15

14. Basal vein ends very close to transverse vein in fore wings but slightly basad; first recurrent vein received by second cubital cell much beyond middle; second recurrent bent outward in middle, the attachment on cubitus about opposite its attachment on the subdiscoidal vein; stigma larger, and extending two fifths of its length into marginal cell the latter broader and shorter about one fourth as wide as long, stigma one half as long as marginal cell; third cubital cell shorter, about one third longer than the second cubital cell; volsellæ scalloped on inner side, subgenital plate almost rectangular *Calicurgus* Lepeletier

14. Basal vein much basad of transverse in forewings; first recurrent vein received by second cubital at middle or before; second recurrent vein sloping outward more or less so that it is nearer tip of wing on the cubital vein than on the subdiscoidal; stigma smaller extending one fourth of its length into marginal cell, the latter narrower and stigma only one third as long as marginal cell; volsellæ not scalloped on inner side, subgenital plate with base much broader than upper half, which is much narrower *Nemagenia* Banks

15. Antennæ somewhat above clypeus; scape with erect hair beneath, upper surface of posterior tibiæ not carinate, but with minute elevations at base of spines scarcely longer than tibial hair; parameres with an outward projection near the base, volsella with a hook at upper end, subgenital generally rectangular *Dinocnemis* Banks
15. Antennæ located just above clypeal border; generally no erect hair beneath on scape; genitalia characteristic, ædeagus pointed, split at tip, volsellæ generally broad; parapenal lobes slender, parameres sometimes with long hairs, subgenital plate of various shapes. Hind tibia strongly toothed posteriorly *Priocnemis* Schiödte
16. Propodeum nearly level on dorsal surface; sides elevated, from spiracle to near posterior dorsal end, as a rounded ridge so that the sides are vertical 17
16. Propodeum sloping in a curve to tip, or at least without the rounded ridge and vertical sides 18
17. A strong constriction between the pronotum and thorax, sometimes with a spine or mammæ in front of middle coxæ. Chile.
*Spichtostethus** Kohl
17. No constriction between the pronotum and thorax.....*Adirostes** Banks
18. Malar space very long; last joint of mid and posterior tarsi with distinct lateral spines; front femora strongly thickened.
Chirodamus Haliday¹
18. Either no malar space or present, yet while plainly evident yet not long, and if evident species very hairy 19
19. Malar space evident, longer than in genera except *Allocyphonix* and *Chirodamus*. S.A. species of genus* *Calopompilus* Ashmead
19. No malar space 20
20. Marginal cell broadly rounded at tip, blunt; clypeus broadly concave below; pronotum seen from side, flat and not greatly produced below; antennæ slender; propodeum rarely striate; parameres generally very broad, volsellæ broad, generally curved at tip, parapenal lobes slender, ædeagus short, split; subgenital large, hairy at edges, often with ridges or raised areas *Cryptocheilus* Panzer
20. Marginal cell acute at tip; sometimes slightly blunt; clypeus concave in front or truncate 21
21. Clypeus broadly concave below 22
21. Clypeus plainly truncate 23
22. Abdomen strongly hairy above, rest of body also strongly hairy, including legs; antennæ rather stout and heavy *Onochares* Banks
22. Abdomen not hairy above except at base and tip; antennæ very slender; propodeum usually ridged or striate transversely; pronotum, from side, curving down from back to front, not at all flat.

Chirodamus heiligbrodtii Cresson

¹ South American forms, according to Banks, loc. cit.

23. Joints of flagellum not twice as long as broad; propodeum not striate; abdomen long-haired above *Derochilus* Banks
23. Joints of flagellum generally much more than twice as long as broad. 24
24. Abdomen short-haired above; parameres with the inside edge scalloped, ædeagus much longer than rest of genitalia; parameres short, subgenital plate with long hairs at edge; subdiscoidal vein in rear wings ends beyond cubitus or is interstitial with it; cubitus rises in a high arch *Chirodamus* Haliday
24. Subdiscoidal vein in rear wings in basad of cubitus and cubitus does not rise in a high arch. S.A. *Reedemia** Banks
25. Claws cleft 26
25. Claws toothed 29
26. Last joint of mid and posterior tarsi with a median row of spines on under side; antennæ slender toward tip; posterior tibiæ with rather long spines, but teeth very small, if any; transverse vein only very slightly curved; femora may have a few spine pits near tip.
Priochilus Banks
26. No median spines on last joint of mid and hind tarsi; no spine pits on femora 27
27. Transverse vein in fore wings straight across; third cubital cell as broad as long, almost rectangular with a deep median bend in third inter-cubital vein (concave on inner side); hind tibiæ without either spines or teeth above; antennæ not clavate *Minagenia* Banks
27. Posterior tibiæ with spines or small teeth above; transverse vein more or less oblique; third cubital vein longer than broad 28
28. Antennæ distinctly clavate with joints nine through twelve the thickest; last segment of abdomen compressed; dorsal part of pronotum flat, front part vertical; posterior tibiæ with spines but no teeth; in posterior wings subdiscoidal vein ends much basad of cubitus.
Balboana Banks
28. Antennæ not clavate, last segment of abdomen not compressed; pronotum rounded in front; posterior tibiæ with a row of teeth and small spines; in rear wing subdiscoidal vein ends far beyond cubitus *Anacyphonyx* Banks
29. A group of wide spreading, forward extending bristles under head on each maxillary cardo; legs short, front femora stout; small, very hairy species generally with hyaline wings with clouds on the basal vein and cubital cells *Dipogon* Fox
29. No such bristles under head; legs not short, femora not stout, not hairy and seldom with clouds in the wings 30
30. Clypeus very long, almost one-half as long as wide; subdiscoidal vein in rear wings ends beyond the cubitus, very seldom otherwise and then with markings like genus *Pæcilopompilus* Howard (*Batazonus* Ashmead); in only a few cases are there spines under last joints of posterior tarsi 31
30. Clypeus of normal length, much less than one-half as long as wide; sub-

- discoidal vein in rear wings either interstitial with, or basad of cubitus; not marked like *Pæcilopompilus* 32
31. Clypeus much raised above mouth parts, often with a sharp tooth in center of anterior margin; species not long for their size, similar to rest of subfamily; markings on body not like those of *Pæcilopompilus* in subfamily *Psammocharinae* *Priocnessus* Banks
31. Clypeus not raised above mouth parts, and never with a tooth on the middle of anterior margin of clypeus; long, slender species, reminiscent of the Agenoid type, often with markings like those of *Pæcilopompilus* Howard *Amerocnemis* Banks
32. No distinct spines under last joint of posterior tarsi 33
32. Distinct spines either lateral or median under posterior tarsi 36
33. Pronotum vertical in front 34
33. Pronotum rounded in front 35
34. See couplet 14, first part *Calicurgus* Lepeletier
34. See couplet 14, second part *Nemagenia* Banks
35. Antennæ above the clypeus by a slightly shorter distance than length of pedicel; scape with erect hair beneath; pronotum somewhat vertical like the preceding; species more hairy than in the following couplet; upper surface of posterior tibiæ not carinate, but with minute elevations at the base of spines that hardly exceed length of tibial hair *Dinocnemis* Banks
35. Antennæ located just above clypeal border; no erect hair below on scape; upper surface of posterior tibiæ carinate; not hairy species *Priocnemis* Schiödt
36. Malar space very long; last joint and mid tarsi with distinct lateral spines; front femora strongly thickened *Chirodamus* Haliday¹
36. Malar space short, fore femora not thickened 37
37. No teeth on posterior edge of hind tibiæ; last joint of mid and posterior tarsi with median teeth beneath *Reedemia** Banks
37. Posterior tibiæ with distinct teeth above as well as stout spines 38
38. Propodeum nearly level on dorsal surface; sides elevated, from spiracle to near posterior dorsal end, as a rounded ridge, so that the sides are vertical 39
38. Propodeum sloping in a curve to tip or at least without the rounded ridge and vertical sides 40
39. A strong constriction between the pronotum and thorax, sometimes with a spine or mammæ in front of middle coxæ. Chile *Spichtostethus**
39. No constriction between the pronotum and thorax *Adirostes** Banks
40. Marginal cell broadly rounded at tip; clypeus broadly concave below; pronotum flat and not greatly produced below, when seen from side; antennæ slender, propodeum rarely striate *Cryptocheilus* Panzer
40. Marginal cell somewhat acute at tip; clypeus broadly concave in front or truncate 41
41. Abdomen strongly hairy above, rest of body also strongly hairy, including legs; antennæ rather stout and heavy *Onochaeres* Banks

41. Abdomen not hairy above except at base and tip; antennæ very slender; propodeum usually ridged or striate transversely; pronotum, from side, curving down from back to front, not at all flat.

Chirodamus heiligbrodtii Cresson

42. Joints of flagellum not twice as long as broad; propodeum not striate; abdomen long-haired above *Derochilus* Banks

42. Joints of flagellum mostly twice as long as broad; abdomen short haired above *Chirodamus* Haliday

Since this paper was written, the Synoptic Catalog of the Hymenoptera of America North of Mexico has been published. In this catalog Townes places *Minagenia* in the Ceropalinae, with which the writer cannot agree. The genitalia of the male Ceropalinae are so very much different than any other group of the Psammocharidæ that the writer believes they should really constitute a separate family.

The writer also has considerably different ideas with regard to the suppression of some genera and placing them as synonyms of other genera, and also does not agree with the removing of some of the species now listed in the genus *Priocnemis* to the genus *Myrmecosalius*.

REFERENCES

1. Banks, N. 1946. Bull. Mus. Comp. Zool. 96, No. 4, pp. 404, 463-525.
2. Dreisbach, R. R. 1949. Mich. Acad. Sci. Arts, and Letters 33, pp. 65-67.